

ABSTRACT OF THE DISCLOSURE

A method for the self-calibration of a tunable, diode pumped solid state laser in which the frequency or the wavelength of the laser radiation of the

5 fundamental frequency and/or doubled frequency is changed by of changing the optical cavity length by means of a piezo-actuator or Brewster window over the total amplification bandwidth of the laser-active material. According to the method, the performance curves during the tuning of an etalon or corresponding optical elements arranged in the cavity are recorded and stored and a tuning function for the respective

10 optical element or optical elements is generated (derived) from these curves by a microcontroller or computer. An optimum working point for the optical element or optical elements for maximum suppression of side modes is adjusted by a digital or analog regulator with the help of a learning curve (learning characteristic). In the solid state laser, an etalon is provided inside the cavity for changing (expanding) the

15 tuning range and for determining the output power of the laser, wherein the etalon is rotatable or swivelable about an axis of rotation which extends at right angles to the optical axis of the laser or so as to be inclined relative to the latter by a small angle.